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## Local food systems and COVID-19: an insight from China



Secondly, innovation is always the key to deal with new situations and challenges. Like in other countries, Information and Communication Technologies (ICTs) were widely used in China and proved efficient to cope with the crisis. Technical services to support farmers' production were regularly provided through online channels, by livestreaming training and social media exchanges. The comprehensive big-data information platform launched by MARA enables real-time monitoring of agriculture-related situations (Information Center of the Ministry of Agriculture and Rural Affairs, 2020). A wealth of data is covered, to name a few, market information, spring production information, coronavirus situation, prevention measures, public opinions and even mobile apps for online grocery shopping, which is of great

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help for policy makers to make timely decisions. Online sales platforms were increasingly established and visited, with large amount of sales achieved for producers especially at the time of lockdowns. Livestreaming and short video platforms became new popular tools to promote sales of agricultural products, which turned out to be very successful models due to the interactive nature, cheaper prices and fans' trust in the host, who are normally Internet celebrities and good at introducing product features. Having seen the advantages of these models, more and more farmers themselves and local governmental officers are joining the livestreaming to sell local products.

The sudden crisis has indeed catalyzed the digitalization of food supply chains and agricultural services, which contributes to diversification of food distribution channels and transformation of food systems. Changes have been observed in all actors involved in the food chains. Many farmers and wholesalers have not used online platforms before, who are now getting familiar with these innovative tools and realizing the advantages. Consumers are forming habits ordering fresh food online and used to immediate deliveries to homes. E-commerce platforms have further developed their supply chains in the agriculture sector, which encouraged more long-term strategies to closely collaborate with the agricultural production end and support farmers. The national government is also developing programmes supporting cold chain storage and logistics which will facilitate online selling of agricultural products.

Innovations are also reflected in other practices to solve problems such as labor shortage, food loss and waste, and last-mile delivery difficulties in cities: enterprises provided contactless delivery by installing shelves in communities, setting up service points in the neighborhood, and using robot delivery; e-commerce enterprises created the 'shared labor' model to ease the labor shortage in delivery, by hiring employees from the catering and retailing industries who are temporarily 'idle' due to the lockdowns; the 'shared store' model is tested in some cities, where people could have fresh food packed in the trunk of their cars when fueling, by simply sitting in the car and ordering through mobile app; in the case of unsalable fruits causing immense food losses and economic losses, the raw fruits and vegetables are increasingly processed into tasty snacks, which improves the shelf life and expands the market as well. These are all valuable attempts that not only meet the immediate need, but also have potential to be developed and applied in the future. For instance, there are already ideas stimulated by the 'shared labor' model, to establish local employee sharing system where the registered idle labor can be immediately collected and hired by high-demand sectors in case of emergencies like the COVID-19 pandemic.

Thirdly, the COVID-19 pandemic has urged the necessity of strengthening urban-rural linkages and fostering local food production. Especially when traditional exchange channels are disrupted, efficient urban-rural coordination and local production could greatly help maintain the flow of food, benefiting both the producers and consumers.

Large wholesale markets, key actors of urban-rural linkages in China, have played crucial roles in mobilizing supplies to satisfy market demand during the epidemic. In a post-crisis scenario, transformation of the wholesale markets is expected in digitalized management, product origin traceability and cold chain infrastructures, to strengthen urban-rural linkages and optimize the food chains.

The epidemic also saw increasing interest towards local food production models, such as Community Supported Agriculture (CSA) in peri-urban areas (International Network URGENCI, 2020), given their advantages over traditional long supply channels. In fact, the shorter supply chains and locally produced fresh food through various forms of urban and peri-urban agriculture could play important roles in enhancing the resilience of local food systems, which has indeed been researched for years and observed in different countries (De Zeeuw et al., 2011; FAO, 2014).

For the longer run, it is necessary to develop an integrated urban-rural development strategy that recognizes the importance of building more resilient and sustainable food systems and allows more effective cooperation among actors across urban, peri-urban and rural areas.

As a conclusion, it is hoped that these implications from China could contribute to tailored solutions in countries that are still facing the outbreak and shed light on long-term strategies in food supply systems across the world. No one-size-fit-all approach exists in this complicated situation where trade-offs between health crisis and economic crisis need to be carefully analyzed according to local context, based on which important decisions will be made. It is a time the world should bind together, sharing ideas and experiences, taking assessments and attempts, and transforming a global crisis into opportunities for more sustainable and resilient food systems and better food environment for the mankind.

#### CRediT authorship contribution statement

**Shulang Fei:** Conceptualization, Methodology, Investigation, Writing - original draft. **Jia Ni:** Investigation, Writing - review & editing. **Guido Santini:** Writing - review & editing.

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